

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) An implantable device for repairing a regurgitant cardiac valve having two or more leaflets, an effective valve area, and a subvalvular structure wherein at least one leaflet has a prolapsing segment, comprising:

a structure configured for attachment to the prolapsing leaflet at the prolapsing segment without affecting the ~~mobility of the opposing leaflet~~ effective valve area, said structure defining a stable coaptation surface against which an opposing leaflet reversibly coapts during systolic contraction of the heart whereby the coaptation between the leaflets is normalized, the coaptation surface configured to extend freely beyond a free margin of the prolapsing segment when the structure is operatively implanted within the valve,

wherein the structure comprises a semi-rigid or rigid material sufficient to provide the stable coaptation surface and capable of withstanding pressures produced by movement of the valve leaflets and blood flow through the valve area thereby preventing regurgitation with coaptation between the leaflets during systolic contraction.

2. (Canceled).

3. (Withdrawn) The device of claim 1 wherein said structure is flexible.

4. (Withdrawn) The device of claim 1 wherein said structure is elastic.

5. (Original) The device of claim 1 wherein said structure has a proximal end configured for affixation to the prolapsing leaflet.

6. (Previously Presented) The device of claim 5 wherein said proximal end has a bifurcated configuration for positioning the free margin of the prolapsing leaflet therein.

7. (Previously Presented). The device of claim 1 wherein said structure has a distal end configured to extend between the leaflets when operatively implanted within the valve.

8. (Original) The device of claim 1 wherein said structure has a distal end configured for affixation to the subvalvular structure.
9. (Original) The device of claim 1 wherein said structure is substantially planar.
10. (Withdrawn) The device of claim 1 wherein said structure is curved or bowed.
11. (Withdrawn) The device of claim 10 wherein the curved structure defines an angle in the range from about 75° to less than 180°.
12. (Original) The device of claim 1 wherein said coaptation surface is configured to substantially mimic a normally function leaflet.
13. (Previously Presented) The device of claim 1 wherein said coaptation surface defines an area at least about 25 mm².
14. (Canceled)
15. (Original) The device of claim 1 wherein said structure has a length in the range from about 5 mm to about 40 mm.
16. (Previously Presented) The device of claim 1 wherein the prolapsing leaflet also has a billowing section and wherein the structure has a surface area sufficient to immobilize the billowing section.
17. (Original) The device of claim 1 wherein the valve also has a dilated annulus resulting in a gap between the prolapsing leaflet and the opposing leaflet during systole and wherein a portion of said structure has a length sufficient to bridge the gap.

18. (Currently Amended) A system for repairing a regurgitant cardiac valve having two or more leaflets, an effective valve area, and a subvalvular structure wherein at least one leaflet has a prolapsing segment, comprising:

a structure configured for attachment to the prolapsing leaflet at the prolapsing segment without affecting the ~~mobility of the opposing leaflet~~ effective valve area, said structure defining a coaptation surface against which an opposing leaflet reversibly coapts during systolic contraction of the heart wherein the coaptation between the leaflets is normalized, the coaptation surface configured to extend freely beyond a free margin of the prolapsing segment when the structure is operatively implanted within the valve,

wherein the structure comprises a semi-rigid or rigid material sufficient to provide the stable coaptation surface and capable of withstanding pressures produced by movement of the valve leaflets and blood flow through the valve area thereby preventing regurgitation with coaptation between the leaflets during systolic contraction; and

a fixation means for affixing said structure to the prolapsing leaflet.

19. (Original) The system of claim 18 where said fixation means is selected from the group consisting of sutures, staples, clips, fasteners and glues.

20. – 42. (Canceled)

43. (Previously Presented) The device of claim 1, wherein the structure is configured to be non-attachable to an annulus of the valve.

44. (Previously Presented) The device of claim 1, wherein the structure has a configuration which does not engage an annulus of the valve when operatively positioned.

45. (Previously Presented) The device of claim 1, wherein the structure comprises a surface configured to override a surface of the prolapsing segment.

46. (Previously Presented) The device of claim 1, wherein the structure comprises a surface configured to underlie a surface of the prolapsing segment.

47. (Previously Presented) The device of claim 1, wherein the coaptation surface is configured to be flush with a surface of the valve when the structure is operatively implanted.